

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-6 and 9-15 are pending in this application. Claims 1 and 9 are herein amended. Support for the amendment of claims 1 and 9 is found at least in the specification at page 8, line 24 to page 9, line 21 of the specification. No new matter is added.

In the outstanding Office Action, claims 1, 4, 5, and 9-15 were rejected under 35 U.S.C. § 103(a) as obvious over Arnowitz (US 2004/0033166) in view of Gaillon (WO 99/27349). Claim 2 was rejected as obvious over Arnowitz, in view of Gaillon and Bannerjee (US 6,307,630). Claim 6 was rejected as obvious over Arnowitz, in view of Gaillon and Bell (US 5,814,277).

Claims 1, 4, 5, and 9-15 were rejected under 35 U.S.C. § 103(a) as obvious over Arnowitz in view of Gaillon. Claim 1, from which claims 4, 5, and 11-15 depend, is herein amended. As amended, claim 1 is directed to an automated and robotized platform including a battery of micro-fermentors with a useful culture volume ranging from 2 mL to 500 mL. Each of the micro-fermentors includes a cell culture. The platform includes an external sensor for measuring at least an optical property of each cell culture contained in each micro-fermentor. The external sensor includes a turbidity measuring sensor. Each platform further includes a mobile sensor holder able to receive the external sensor. The sensor holder has sensor moving means for moving the external sensor from a micro-fermentor to another one and for allowing for the real time measurement of at least one optical property. The platform also has monitoring and processing means for receiving in real time measurements of the optical property from the external sensor and monitoring in real time a movement of the mobile sensor holder. And the platform has a system for regulating a temperature including a

Peltier effect autonomous regulating system. The regulation of the temperature by the Peltier effect is independent and programmable for each micro-fermenter.

Claim 9, from which claim 10 depends, is also amended. As amended, claim 9 is directed to a method for automatically measuring at least one optical property of cell cultures contained within a micro-fermentor with a useful culture volume ranging from 2 mL to 500 mL battery, wherein the temperature of each micro-fermentor is independently programmable and regulated by Peltier effect. The claimed method includes measuring automatically at least one optical property of a culture contained within one of the micro-fermentors via an external sensor, in which the external sensor includes a turbidity-measuring sensor. The method further includes moving in a robotized way the external sensor towards another micro-fermentor, and measuring automatically at least one optical property of a culture contained within another micro-fermentor via the external sensor.

The cited references do not teach or suggest the claimed invention. Arnowitz discloses an automated robotic device that is mainly designed for controlling crystallization of proteins. In some embodiments, the device disclosed by Arnowitz may also be used for growth of cells. *See* page 2, § [0014], page 3, § [0017], page 5, § [0044], page 7, § [0069]-[0070], page 15, § [0180]-page 16, § [0191]). Generally, the automated robotic device disclosed by Arnowitz comprises a plurality of dynamic dialysis units comprising a reagent chamber and a sample chamber, wherein the reagent chamber communicates via a first fluid conduit to the reagent reservoir and further communicates with a second fluid conduit; and wherein at least one first fluid transfer mechanism transfers fluid between the first reagent reservoir and the reagent chamber via the first conduit, for each dynamic dialysis unit. *See* page 5, § [0044]. In these embodiments for culturing cells, each dynamic dialysis unit of the automated robotic device from Arnowitz contains at least one sensor "that can sense a change in one of the growth pattern, state of differentiation, metabolism, or physiology of said cells

in said sample chamber.” *See* page 6, § [0044]). Regarding the presence of at least one sensor dedicated to each of the dialysis unit comprised in the automated robotic device, the embodiments thereof designed for cell culture are in line with the generalized embodiment of the automated robotic device that is illustrated in Figure 1, further detailed at pages 8 and 9. Moreover, each dialysis unit of the automated robotic device from Arnowitz may contain a temperature controller for controlling the temperature of the reagent that is pumped from mechanism to a unit wherein the temperature controller may comprise one or more Peltier devices. *See* page 9, § [0100].

The device of Arnowitz does not comprise an external sensor as required in the device of claim 1 and the method of claim 9. As claimed, the sensor is in a mobile sensor holder equipped with sensor moving means for moving the external sensor from a micro-fermentor to another one. The sole moving optical means disclosed in the device of Arnowitz is the camera 310 in Figs. 4-5, described at page 11, § [0122] through page 12, § [0137]. The camera device in Arnowitz is mounted on a standard microscope and is aimed at generating digital images of the magnified interior of each sample chamber. *See* page 15, § [0178]-§ [0179]. Resulting digital images are illustrated in Fig. 15, and may allow investigation of the crystallization of a protein. Clearly, Arnowitz exclusively teaches to one skilled in the art a robotic device where the sensor for measuring an optical property of each cell culture shall be bound to each dialysis unit. It teaches nothing with regard to an external sensor, and does not teach or suggest a turbidity-measuring sensor.

Gaillon discloses an apparatus and method for measuring optical properties of a sample, including turbidity, by a specific system of feedback control. Gaillon has several disadvantages that are overcome by the present invention. Among the disadvantages are the presence of a plurality of sensors which required individual calibration before use, which led to light measure discrepancies. *See* Specification, page 8, lines 4-29. Gaillon is exclusively

aimed at designing a specific feedback control for an optimal optical measurement of the samples to be analyzed. Gaillon includes no technical information that would have allowed one skilled in the art to design a robotic platform equipped with a mobile sensor holder comprising an external turbidity-measuring sensor. Indeed, with its plurality of sensors which required individual calibration before use, Gaillon would have taught one skilled in the art away from such a mobile sensor holder in the claimed invention. In any event, Gaillon does not teach or suggest the claimed external sensor. A claimed invention can only be found obvious if there is “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR Int’l v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). Moreover, every word in a claim must be considered in determining the question of patentability against the prior art. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970). Failing to teach or suggest all of the elements of the claimed invention, the combination of Arnowitz and Gaillon cannot render claims 1 or 9, or the claims depending therefrom, obvious. Applicants respectfully request withdrawal of this rejection.

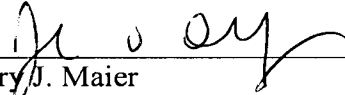
Claim 2 was rejected as obvious over Arnowitz, in view of Gaillon and Bannerjee, and claim 6 was rejected as obvious over Arnowitz, in view of Gaillon and Bell. Claims 2 and 6 depend from claim 1. Neither Bannerjee nor Bell add any teaching sufficient to overcome the deficiencies of Arnowitz and Gaillon. Accordingly, the combination of references cannot render the claimed invention obvious. Applicants respectfully request withdrawal of these rejections.

In the outstanding Office Action, the abstract was objected to. Applicants herewith submit a replacement paragraph which is believed to obviate any objections.

In light of the above discussion, the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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